CLAIMS

1. Electrical connector or electrical switching element comprising a metallic core and a galvanically deposited metal containing coating layer, the metal containing coating layer being deposited by electrolytic composite plating and the coating layer comprises a metal matrix and distributed therein particles selected from the group of particles having electrically conductive properties, particles having lubricating properties, particles having wear resistance properties and particles having properties of increasing the temperature durability or combinations of particles from those groups, characterised in that the electrical connector or electrical switching element has been made from a continuously coated metal strip comprising the metallic core and the galvanically deposited metal containing coating layer.

2. Electrical connector or electrical switching element according to claim 1, characterized in that the electrically conductive particles are selected from the group comprising carbonaceous materials such as soot, graphite and carbonaceous nanotubes, and electrically conductive ceramic materials comprising borides, such as titanium boride and iron boride; nitrides such as titanium nitride and chromium nitride; sulfides such as titanium sulfide, tantalium disulfide and molybdeen disulfide, and electrically conductive oxides such as titanium oxide.

3. Electrical connector or electrical switching element according to claim 1 or 2, characterized in that the particles having lubricating properties are selected from the group comprising polymers, such as PTFE, polyimide and polyamide, carbon containing particles such as essentially pure carbon and graphite, ceramic particles such as molybdeen disulphide and borium nitride, and lubricating means containing capsules such as capsules containing polyphenylether or organic lubricating means, and optionally the particles having lubricating properties also having corrosion inhibiting additives.

4. Electrical connector or electrical switching element according to any one of the preceding claims, characterized in that the particles having wear resistance properties are selected from the group comprising ceramic particles such as aluminium oxide, zirconium oxide, silicon carbide, boron nitride and titanium nitride, and optionally carbonaceous nanotubes.

5. Electrical connector or electrical switching element according to any one of the preceding claims, characterized in that the particles having properties of increasing temperature durability are selected from the group comprising heat resistant and conductive ceramic particles such as aluminium oxide, zirconium oxide, silicon carbide, diamond-like boron nitride and titanium nitride, and carbonaceous materials such as soot, graphite and carbonaceous nanotubes.

6. Electrical connector or electrical switching element according to any one of the preceding claims, characterized in that the co-deposited metallic matrix of the coating layer on the continuously coated metal strip mainly comprises one or more metals selected from the group nickel, copper, tin, zinc, chromium and alloys or combinations thereof.

7. Electrical connector or electrical switching element according to any one of the preceding claims, characterized in that the metallic core mainly comprises one or more metals selected from the group low carbon steel, high-strength steel, stainless steel, copper, including bronze and brass and multilayer composites alloys or mixtures thereof.

8. Electrical connector or electrical switching element according to any one of the preceding claims, characterized in that the distributed particles have a size in the range of 0.001 – 15 μm, preferably in the range of 0.1 – 15 μm.

9. Electrical connector or electrical switching element according to any one of the preceding claims, characterized in that the volume fraction of the distributed

particles in the co-deposited coating layer is in the range of 0.7% to 30% of the volume of the coating layer.

10. Electrical connector or electrical switching element according to any one of the preceding claims, characterized in that the thickness of the metal strip is in the range of 0.1 to 1.5 mm.

11. Electrical connector or electrical switching element according to any one of the preceding claims, characterized in that the coating layer has a thickness in the range from 0.2 – 10 μm, preferably in the range of 1 – 5 μm.

12. Electrical connector or electrical switching element according to any one of the preceding claims, characterized in that the particles of at least one group, preferably of all groups of particles, are homogeneously distributed in the coating layer.

13. Method for the manufacture of an electrical connector or electrical switching element according to any of the claims 1 to 12, characterized in that a metallic core is fed through a galvanic bath and a coating layer is deposited on at least one side of the metallic core in a continuous or semi-continuous manner, wherein a metal matrix and particles selected from the group of particles having electrically conductive properties, particles having lubricating properties, particles having wear resistance properties or particles having properties of increasing temperature stability and combinations thereof, are co-deposited on the metal core to form the coating layer, and the electrical connector or electrical switching element is manufactured from the coated metal core.

14. Continuously coated metal strip for the manufacture of components for electrical connectors or electrical switching elements comprising a metallic core and a galvanically deposited metal containing coating layer, the metal containing coating layer being deposited by electrolytic composite plating and the coating

layer comprises a metal matrix and distributed therein particles selected from the group of particles having wear resistance properties.

15. Continuously coated metal strip according to claim 14, wherein the particles having wear resistance properties are selected from the group comprising ceramic particles such as aluminium oxide, zirconium oxide, silicon carbide, boron nitride and titanium nitride, and optionally carbonaceous nanotubes.

16. Continuously coated metal strip for the manufacture of components for electrical connectors or electrical switching elements comprising a metallic core and a galvanically deposited metal containing coating layer, the metal containing coating layer being deposited by electrolytic composite plating and the coating layer comprises a metal matrix and distributed therein particles selected from the group of electrically conductive particles, selected from the group comprising electrically conductive ceramic materials comprising borides, such as titanium boride and iron boride; nitrides such as titanium nitride and chromium nitride; sulfides such as titanium sulfide, tantalium disulfide and molybdeen disulfide, and electrically conductive oxides such as titanium oxide.

17. Continuously coated metal strip for the manufacture of components for electrical connectors or electrical switching elements comprising a metallic core and a galvanically deposited metal containing coating layer, the metal containing coating layer being deposited by electrolytic composite plating and the coating layer comprises a metal matrix and distributed therein particles selected from the group of particles having lubricating properties, selected from the group comprising polymers, such as PTFE, polyimide and polyamide, ceramic particles such as molybdeen disulphide and borium nitride, and lubricating means containing capsules such as capsules containing polyphenylether or organic lubricating means.

18. Continuously coated metal strip for the manufacture of components for electrical connectors or electrical switching elements comprising a metallic core and a

galvanically deposited metal containing coating layer, the metal containing coating layer being deposited by electrolytic composite plating and the coating layer comprises a metal matrix and distributed therein particles selected from the group of particles having properties of increasing temperature durability, selected from the group comprising heat resistant and conductive ceramic particles such as aluminium oxide, zirconium oxide, silicon carbide, diamond-like boron nitride and titanium nitride.

19. Use of a continuously coated metal strip according to any one of the claims 14-18 in the manufacture of an electrical connector or electrical switching element.

20. Method for the manufacture of a continuously coated metal strip according to any of the claims 14 to 18, characterized in that a metallic core is fed through a galvanic bath and a coating layer is deposited on at least one side of the metallic core in a continuous or semi-continuous manner, wherein a metal matrix and particles selected from the group of particles having electrically conductive properties, particles having lubricating properties, particles having wear resistance properties or particles having properties of increasing temperature stability and combinations thereof, are co-deposited on the metal core to form the coating layer.